



湖南艾华集团股份有限公司

HUNAN AIHUA GROUP CO., LTD

Tel: (0737)6184466 Fax : (0737)6180493

Http://www.aihuaglobal.com

客户Customer: 深圳市海宜通科技有限公司

日期Date: 2018年10月20日

承 认 书 SPECIFICATION

种 类: 固态铝电解电容器
Description: Aluminum Solid Electrolytic Capacitors
艾华料号 AISHI P/N: SPZ1CM271F09O00RAXXX
系 列 SERIES: PZ
规 格 尺 寸 ITEM: 16V270uF(Φ8*9)
客户料号 CustomerP/N: /
编 号No.: CRS-FX-1810066

批准 Approved by			客户确认Client Confirmed	
制作 Prepared by	审核 Checked by	批准 Approved by	审核 Checked by	批准 Approved by
 黄小柳 技术部	 叶军 技术部	 邹志平 技术部		

Please return one copy with your authorized signature when you accept these specifications.
Please note that no return within 6 months is considered to be approvable.

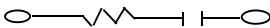
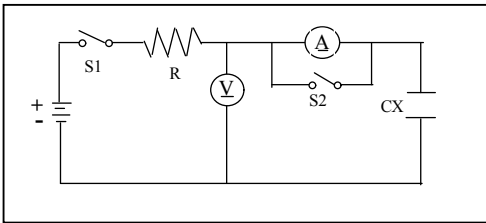
制订/修订履历表Make/revised curriculum vitae

Issued-date:	Name	Approval Sheet				
2018/10/20	File No	PZ	Version	01	Page	2
STANDARD MANUAL						

Issued-date:	Name	Approval Sheet				
2018/10/20	File No	PZ	Version	01	Page	3
STANDARD MANUAL						

Starts	File Description	Component No./rev
Released	Approval Sheet- PZ	CRS-2018-PZ/01

6.1 电性能Electrical Characteristics

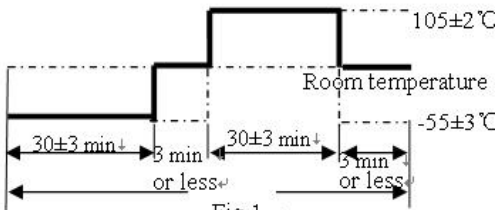
序号 No.	项目 Item	测试方法 Test method	性能 Performance
6.1.1	额定工作电压 Rated voltage	DC: 2.5V~100V	
6.1.2	电容量 Capacitance	测试频率Measuring frequency : 120Hz 测试电路Measuring circuit  等效串联电路Series equivalent circuit	参考特性表 Refer to characteristic table
6.1.3	损失角正切值 Dissipation Factor	测试电压Measuring voltage: 0.5Vrms or less 直流偏压DC bias voltage : +1.5~2.0VDC	参考特性表 Refer to characteristic table
6.1.4	等效串联电阻 ESR	测试频率Measuring frequency: 100kHz 测试温度Measuring temperature: 20 ±2℃ 测量位置：不得超过导针焊点2mm。 Measuring point : 2mm max from the surface of a sealing resin on the lead wire	参考特性表 Refer to characteristic table
6.1.5	漏电流 Leakage current	直流漏电流在20℃，有串联1000±100Ω电阻的情况下以直流工作电压且充电2min后测试 DC leakage current shall be measured after 2 minutes application of the DC rated working voltage through the1000 Ω resistor at 20℃  Refer to characteristic table R : 1000±100Ω A :电流表 DC current meter S1 : 开关 Switch S2 : 电流表保护开关 Switch for protect of current meter V:电压表 DC voltage meter CX : 测试电容Testing capacitor	参考特性表 Refer to characteristic table

Issued-date:	Name	Approval Sheet				
2018/10/20	File No	PZ	Version	01	Page	4
STANDARD MANUAL						

Issued-date:	Name	Approval Sheet				
2018/10/20	File No	PZ	Version	01	Page	5
STANDARD MANUAL						

6.3 耐受能力Endurance Performance

Issued-date:	Name	Approval Sheet				
2018/10/20	File No	PZ	Version	01	Page	6
STANDARD MANUAL						

序号 No.	项目 Item	测试方法 Test method	性能 Performance
6.3.3	快速变温 Rapid change of temperature	 使用电压：无负荷 Applied voltage : without load 循环次数：5次 Cycle number : 5 Cycles 测试图:Fig. 1Test diagram: Fig. 1	容量变化：在初始值的±10%内 Capacitance change : Within ±10% of the initial capacitance 损失角：小于或等于规格值 tanδ ≤ initial specified value. 漏电流：小于或等于规格值 Leakage current ≤ initial specified value
6.3.4	负荷寿命试验 Load Life Test	电容在105±2℃,加载直流电2000小时后，需在室温下放置2小时才可进行测试 After 2000hours continuous application of DC rated working voltage at 105 ± 2℃,the measurements shall be measured after 2 hours exposed at room temperature	容量变化：在初始值的±20%内 Capacitance change within ±20% of the initial value 损失角：小于规格值的150% tan δ ≤ 150% of the initial specified value. 等效串联电阻≤规格值的150% ESR ≤ 150% of the initial specified value. 漏电流≤规格值 Leakage current ≤ initial specified value 外观：没有明显的损伤 Appearance:No significant damage

Issued-date:	Name	Approval Sheet				
2018/10/20	File No	PZ	Version	01	Page	7
STANDARD MANUAL						

序号 No.	项目 Item	测试方法 Test method	性能 Performance																								
6.3.5	端子强度 Terminal Strength	测试方法 Test method 端子抗拉强度： 沿电容器端子引线方向施加拉力（如下表），30±1s Tensile strength of termination: A static load (stated in the table below) shall be applied to the terminal in the axial direction and acting in a direction away from the body for 30±1sec. <table><tr><td>引线直径Φ</td><td>0.45 mm</td><td>0.5 mm</td><td>0.6 mm</td><td>0.8 mm</td><td>1.0 mm</td></tr><tr><td>拉力N</td><td colspan="2">5N</td><td colspan="2">10N</td><td>25N</td></tr></table> 端子抗弯强度： 在电容器引线施加固定重力（如下表），然后，将电容器弯折90° 后回到原位，再向相反方向弯折90° 后回到原位。 上述过程在5秒内完成。 <table><tr><td>引线直径Φ</td><td>0.45 mm</td><td>0.5 mm</td><td>0.6 mm</td><td>0.8 mm</td><td>1.0 mm</td></tr><tr><td>拉力N</td><td colspan="2">2.5N</td><td colspan="2">5N</td><td>10N</td></tr></table> Bending strength of termination: Hang the specified dead weight (stated in the table below), then bent the body through 90°, return to the original position. Next bent it in opposite direction through 90°with the same speed, again return to the original position. Carry out this operation in about 5 sec.	引线直径Φ	0.45 mm	0.5 mm	0.6 mm	0.8 mm	1.0 mm	拉力N	5N		10N		25N	引线直径Φ	0.45 mm	0.5 mm	0.6 mm	0.8 mm	1.0 mm	拉力N	2.5N		5N		10N	特性 Performance 测量电容器应无接触不良、LC 超规格值、开路或短路，无可见机械损伤 When the capacitor is measured, there shall be no intermittent contacts, no over specification LC, or open or short-circuiting. There shall be no such mechanical damage.
引线直径Φ	0.45 mm	0.5 mm	0.6 mm	0.8 mm	1.0 mm																						
拉力N	5N		10N		25N																						
引线直径Φ	0.45 mm	0.5 mm	0.6 mm	0.8 mm	1.0 mm																						
拉力N	2.5N		5N		10N																						

The measurements should be measured after 2 hours exposed at room temperature

Issued-date:	Name	Approval Sheet				
2018/10/20	File No	PZ	Version	01	Page	8
STANDARD MANUAL						

Starts	File Description	Component No./rev
Released	Approval Sheet- PZ	CRS-2018-PZ/01

7.物料编码PART No. SYSTEM

S	PZ	1C	M	271	F09	O00	R	AXXX
---	----	----	---	-----	-----	-----	---	------

特殊编码 Special code(7.9)
 奈印编码 Marking code(7.8)
 成型方式编码 Terminal code(7.7)
 尺寸编码 Size code(7.6)
 电容量编码 Capacitance Code(7.5)
 电容公差 Capacitance tolerance
 电压编码 Voltage Code(7.3)
 系列编码 Series Code(7.2)
 类别编码 Category Code(7.1)

7.1 类别编码Category Code

编码Code	S
类别编码Category Code	固态电容Solid Capacitor

7.2 系列编码Series Code

编码Code	PZ
系列编码Series Code	PZ

7.3 电压编码Voltage Code

编码Code	0E	0J	1C	1E	1V	1J	1K
电压编码VoltageCode(W.V)	2.5	6.3	16	25	35	63	100

7.4 电容公差Capacitance tolerance

“M”代表 -20 % ~ +20 % “M”stands for -20 % ~ +20 %

7.5 电容量编码Capacitance Code

编码Code	470	101	271	471	561	681	821	122
电容量Capacitance (uF)	47	100	270	470	560	680	820	1200

7.6 尺寸编码Size Code

编码Code	D07	B09	E05	E07	E12	F09	F16	G12	K18
直径D (Φ)	5	5.5	6.3	6.3	6.3	8	8	10	13
高度H (mm)	7	9	5	7	12	9	16	12	18

7.7 成型方式编码 Terminal Code

编码Code	O00	C35	P35	C48
其他 Other	平豆散装 Platform rubber& Inbulk	平豆剪脚 Platform rubber &Lead Cut 3.5±0.5mm	平豆编带 Platform rubber& Taping	平豆剪脚 Platform rubber&Lead Cut 4.8±0.3mm

7.8 捺印编码Marking Code

编码Code	S	R
捺印Marking	天藍Sky blue	紅色Red

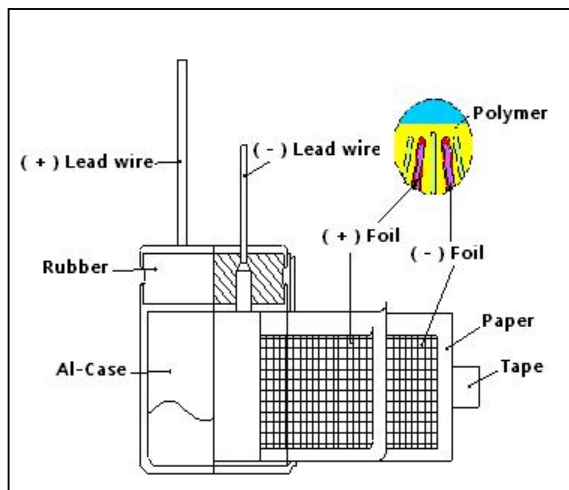
7.9 特殊编码 Special Code

“AXXX” 代表正常品, “AXXX” stands for normal products.

Issued-date:	Name	Approval Sheet				
2018/10/20	File No	PZ	Version	01	Page	9
STANDARD MANUAL						

Starts	File Description	Component No./rev
Released	Approval Sheet- PZ	CRS-2018-PZ/01

8. 结构Construction



导线:固体镀锡铜包钢线

Lead wires : Solid tinned copper weld steel wire

导线端子: 高纯铝 Al-boss : High pure aluminum

电解纸: 马尼拉麻Paper : Manila hemp

铝箔 (正极): 高纯铝Al-foil (Anode) : High pure aluminum

铝箔 (负极): 碳箔、高纯铝

Al-foil (Cathode) : Carbon foil、High purity aluminum

镀膜铝壳: 铝+镀膜 (耐压600V以上) Coating AL-case:Aluminum+coating(Can withstand voltage above 600V)

胶带: 聚酯Tape : Polyester

胶粒: (树脂)压缩成型IIR-Rubber:Resin (Compression molding)

导线和圆柱端子通过焊接连接在一起

The lead wire and the Al-boss are welded together.

导线扁平端子与铝箔通过按压连接在一起

The Al-tab and the Al-foil are stitched to join together.

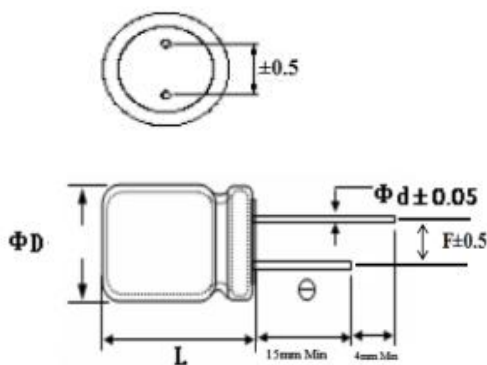
卷绕的素子外部以阴极箔包裹

The outer most Al-foil spiral of the element is cathode.

导电高分子用作电解质

Conductive polymer is used as the electrolyte.

9. 尺寸图Outer dimensions (单位Unit:mm)



尺寸编码 Size Code	ΦD (mm)	ΦD(mm) Tolerance	L (mm)	L (mm) Tolerance	F (mm)	Φd (mm)
F09	8	-0.1~+0.5	9	-0.5~+1	3.5	0.6

10. 特性表格Characteristics Table

序号 N o.	艾华料号 AISHI P/N	额定 工作电压 Rated Work Voltage (V.DC)	电容量 Nominal Capacitance 120Hz,20℃ (μF)	电容量 公差 Capacitance Tolerance (%)	温度 Oper Temp (℃)	尺寸 Nominal Case Size D*L (mm)	等效 串联电阻 E.S.R 100KHz 20℃ (mΩmax)	最大漏电流 Leakage current 20℃(μA max) 2Minutes/W.V	损失 D.F 120Hz, 20℃ (%max)	纹波电流 Ripple Current 100KHz,105℃ (mA.rms)	寿命 Load Life (Hours)
1	SPZ1CM271F09O00RAXXX	16	270	-20~+20	105	8*9	20	864	12	2900	2000

11. 纹波电流频率系数Frequency coefficient for ripple current

频率Frequency	120Hz ≤ f < 1 kHz	1 KHz ≤ f < 10 kHz	10 KHz ≤ f < 100 kHz	100 KHz ≤ f < 300 kHz
系数Coefficient	0.05	0.3	0.7	1

Issued-date:	Name	Approval Sheet			
2018/10/20	File No	PZ	Version	01	Page
STANDARD MANUAL					

Issued-date:	Name	Approval Sheet				
2018/10/20	File No	PZ	Version	01	Page	11
STANDARD MANUAL						

Issued-date:	Name	Approval Sheet				
2018/10/20	File No	PZ	Version	01	Page	12
STANDARD MANUAL						

Issued-date:	Name	Approval Sheet				
2018/10/20	File No	PZ	Version	01	Page	13
STANDARD MANUAL						

It is conducted under an advance consultation with you if this specification is changed.

Issued-date:	Name	Approval Sheet				
2018/10/20	File No	PZ	Version	01	Page	14
STANDARD MANUAL						